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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,548	06/16/2005	Kars-Michiel Hubert Lenssen	NL03 0179 US1	7972
65913	7590	06/08/2009	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			LAFORGIA, CHRISTIAN A	
			ART UNIT	PAPER NUMBER
			2439	
			NOTIFICATION DATE	DELIVERY MODE
			06/08/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,548	<b>Applicant(s)</b> LENSSEN ET AL.	
	<b>Examiner</b> Christian LaForgia	<b>Art Unit</b> 2439	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/16/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. Claims 1-14 have been presented for examination.

#### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

#### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 16 June 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "near" in claim 5 is a relative term which renders the claim indefinite. The term "near" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. One of ordinary skill in the art could reasonably construe the security device of claim 5 to being anywhere from adjacent or attached to the array of MRAM-cells or connected to the chassis of the device.

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***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 6, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,219,789 B1 to Little et al., hereinafter Little, in view of U.S. Patent Application Publication No. 2002/0008988 A1 to Lenssen et al., hereinafter Lenssen.

8. As per claims 1 and 12, Little teaches a method and clearing circuit that clears at least a portion of RAM upon the detecting a tamper related event (claim 1) and wherein the memory may be any form of non-volatile memory include a ferromagnetic memory (column 4, line 50 to column 5, line 20).

9. Little does not disclose wherein the RAM is an array of MRAM-cells and wherein the security device (clearing circuit) is a magnetic device.

10. Lenssen teaches an array of magnetic memory cells (Abstract).

11. It would have been obvious to one of ordinary skill in the art to apply the security function of Little to the array of magnetic memory cells of Lenssen using a magnetic device, since it would yield predictable results such as preventing unauthorized users from gaining access to memory. See *KSR International Co. v. Teleflex Inc.*, 550 USPQ2d 1385, 1395 (2007). Furthermore, Lenssen discusses that the writing to the array of magnetic memory cells is done via magnetization (paragraph 0003), such that one of ordinary skill would understand to clear

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what was stored in memory would take another magnet.

12. Regarding claims 6 and 7, Lenssen teaches the array being built on a substrate (paragraph 0026, 0047, 0048).

13. Little and Lenssen do not teach wherein the security device is built at the same or opposite side of the substrate as the MRAM-cells.

14. Since the MRAM cells with a security device have been shown to be obvious, it would have required been obvious to one of ordinary skill in the art at the time the invention was made to include the security device either on the same side or opposite side of the substrate as the MRAM-cells. The position of an element of the device is not patentably distinct from the prior art unless the shifting of the location would have modified the operation of the device. See MPEP § 2144.04(VI)(C). See also *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). In this case, the security device would work the same regardless of where it was positioned on the substrate.

15. Claims 2-5, 8-11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little in view of Lenssen as applied to claim 1 above, and further in view of U.S. Patent No. 6,501,678 B1 to Lenssen et al., hereinafter Adelerhof.

16. Regarding claim 2, Little and Lenssen do not teach wherein the security device comprises a magnetic field source in combination with a first soft-magnetic flux-closing layer.

17. Adelerhof teaches a magnetic field source in combination with a first soft-magnetic flux-closing layer (column 16, lines 2-13).

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18. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the security device to have a magnetic field source in combination with a first soft-magnetic flux-closing layer, since Adelerhof states at column 4, lines 35-39 that it creates a magnetic characteristic which is irreversible, thereby preventing unauthorized users from gaining access to the information that was stored in the array of magnetic memory cells.

19. With regards to claim 3, Adelerhof teaches wherein the magnetic field source is a permanent magnet (column 16, line 3).

20. With regards to claim 4, Adelerhof teaches wherein the magnetic field source is an electromagnet (column 16, line 3).

21. Concerning claim 5, Little teaches wherein the security device is built near the array of MRAM-cells (claim 1).

22. With regard to claim 8, Adelerhof teaches wherein the first soft-magnetic flux-closing layer is so as to separate from the magnetic field source when the array of MRAM-cells is tampered with (column 16, lines 2-13).

23. Regarding claim 9, Little and Lenssen do not teach wherein the security device further comprises a magnetic field shaping device.

24. Adelerhof teaches a magnetic field shaping device (column 16, lines 2-13).

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25. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the security device to have a magnetic field shaping device, since Adelerhof states at column 4, lines 35-39 that it creates a magnetic characteristic which is irreversible, thereby preventing unauthorized users from gaining access to the information that was stored in the array of magnetic memory cells.

26. With regards to claim 10, Adelerhof teaches wherein the magnetic field shaping device is a second soft-magnetic layer, the magnetic field source and first soft-magnetic layer being located adjacent the array of MRAM-cells at one side, and the second soft-magnetic layer being located adjacent the array of MRAM-cells at the opposite side thereof (column 16, lines 2-13).

27. With regards to claim 11, Adelerhof teaches wherein the first soft-magnetic layer and/or the second soft-magnetic layer are part of a shielding layer of the MRAM-array (column 16, lines 2-13).

28. Regarding claim 13, Little and Lenssen do not wherein the magnetic field is generated at the MRAM-cells by separating a soft-magnetic flux-closing layer from a magnetic field source.

29. Adelerhof teaches wherein the magnetic field is generated at the MRAM-cells by separating a soft-magnetic flux-closing layer from a magnetic field source (column 16, lines 2-13).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a magnetic field by separating a soft-magnetic flux-closing layer from a

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magnet field source, since Adelerhof states at column 4, lines 35-39 that it creates a magnetic characteristic which is irreversible, thereby preventing unauthorized users from gaining access to the information that was stored in the array of magnetic memory cells.

31. Regarding claim 14, Little and Lenssen do not teach wherein the magnetic field at the MRAM-cells is enhanced by a magnetic field shaping device located adjacent the array of MRAM-cells.

32. Adelerhof teaches wherein the magnetic field at the MRAM-cells is enhanced by a magnetic field shaping device located adjacent the array of MRAM-cells (column 16, lines 2-13).

33. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enhance the magnetic field by a magnetic field shaping device located adjacent to the memory, since Adelerhof states at column 4, lines 35-39 that it creates a magnetic characteristic which is irreversible, thereby preventing unauthorized users from gaining access to the information that was stored in the array of magnetic memory cells.

### ***Conclusion***

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

35. The following patents are cited to further show the state of the art with respect to MRAM cells and securing memory that has been tampered with, such as:

United States Patent No. 7,224,634 B2 to Lenssen et al., which is cited to show an issued patent that is related to the inventor's work.



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United States Patent No. 7,485,976 B2 to Knudsen, which is cited to show a patent with a common assignee that appears to be in a similar field of endeavor.

United States Patent Application Publication No. 2006/0108668 A1 to Knudsen, which is cited to show a patent application with a common assignee that appears to be in a similar field of endeavor.

United States Patent Application Publication No. 2006/0081497 A1 to Knudsen, which is cited to show a patent application with a common assignee that appears to be in a similar field of endeavor.

United States Patent Application Publication No. 2007/0139989 A1 to Knudsen, which is cited to show a patent application with a common assignee that appears to be in a similar field of endeavor.

United States Patent No. 7,205,883 B2 to Bailey, which is cited to show clearing volatile random access memory when a tamper signal is triggered.

United States Patent No. 5,902,690 to Tracy et al., which is cited to show the early magneto-resistive memory patents.

United States Patent No. 6,172,902 B1 to Wegrowe et al., which is cited to show non-volatile magnetic random access memory.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian LaForgia whose telephone number is (571)272-3792.

The examiner can normally be reached on Monday thru Thursday 7-5.

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37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christian LaForgia/  
Primary Examiner, Art Unit 2439

clf